BIOGEA - Testing BIOdiversity Gain of European Agriculture with CAP greening

Background

The intensification of agriculture and the conversion of semi-natural areas to cropland are considered as serious threats to biodiversity in Europe. They have led to a loss of Green and Blue Infrastructure (GBI) in agricultural landscapes. GBI includes landscape structures and habitats such as hedges, water meadows, field margins and woodland, essential for ensuring connectivity between habitats and allowing the migration of species.

The “Greening” of the Common Agricultural Policy (CAP) (the introduction of compulsory agri-environment requirements in the 2014-20 CAP) should help support GBI by encouraging the implementation of environmental measures across the wider countryside. Farming systems across Europe are however highly variable and the impacts on different types of system have yet to be evaluated. BIOGEA aims to address.



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Objectives

- Understand the impacts of greening on the quantity and quality of GBI in the agricultural landscape;
- Understand the short-, medium- and long-term effects of GBIs on biodiversity and ecosystem services at different spatial scales and under different land uses;
- Examine the potential for indicators to measure GBI and the linked biodiversity and ecosystem services;
- Explore ways in which this knowledge can be used to design, develop and manage more resilient GBIs.



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Dissemination activities

The development and implementation of political instruments, guidance for advisors and tools for farmers will be supported through the involvement of a 'Participatory Research Development Network' (PRDN). A series of workshops, round tables, local learning laboratories and a final conference will help a variety of stakeholders contribute to the project and learn from its results.



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Main Activities

Analysis will be carried out both vertically and horizontally: a top-down analysis, from an EU wide scale to a local scale will be complemented by a more regional approach through comparative studies in German, Spanish and Bulgarian case studies. Through this, the following will be examined:

- The EU targets for GBI and greening and their translation into national law. This will be examined through policy analysis on the EU and national level;
- The actual implementation and advice provision in six example regions (one intensive and one High Nature Value in each member state). This will be examined through surveys, interviews and workshops on the national and local level;
- The impacts on biodiversity and ecosystem services. These will be explored through biological field work and modelling.

Case Study Areas

The case study areas cover a range of agricultural systems represented by paired sites in each Member State. They will cover areas with with better and worse GBI connections (more extensive and intensive systems) to look at how policy is being implemented to improve GBI effectiveness. The potential of learning from good practice in the areas with high levels of GBI will be explored as part of the work.

Member State	Name	Type of farming	Change drivers
Germany	Albstadt	Extensive mixed pasture and arable farming	Intensification and abandonment
	Tauberbischofs-heim	Fairly intensive arable	Intensive arable management with pressure on biodiversity and water resources
Spain	Iberian Dehesa	HNV wood pasture - extensive	Abandonment and Intensification (loss of semi-natural features).
	Dry cereal cropland	Extensive with individual trees but with intensification occurring.	Intensification (loss of trees) and aridification. Locally reafforestation with pines
Bulgaria	Western Stara Planina	Extensive pasture, forests, small patches arable	Abandonment and conversion to forestry, climate change leading to fewer days of snow cover and higher incidence of flood events
	Plovdiv region	Arable, pasture, permanent crops, forests	Intensification to monocultures. Industrialisation and urbanisation including water pollution, tourism pressures.

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